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REMARKS

Claims 3, 6 and 27 stand rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 3 has been amended to recite "said first extruded tube." Claim 6 has been amended to recite "said pair of ends." Claim 27 has been amended to recite "said pair of ends." The rejection to claims 3, 6 and 27 have been overcome.

Claim 1 stands rejected under 35 U.S. §103(a) as being unpatentable over Fletcher et al. (U.S. Patent No. 5,078,946) in view of Winter (U.S. Patent No. 5,696,045). It is not obvious to combine Fletcher with Winter. Fletcher discloses a method for manufacturing a heat exchanger article 1 including a plurality of tubes 4 made of a thermoplastic polymer. The tubes are transversely located between end elements 2 and 3. In column 8, lines 17 to 24 of Fletcher, it is disclosed that the tubes are injection molded and preferably formed of a polyamide. Winter discloses a method of preparing polyolefins having a wide molecular weight distribution and a high molecular weight. It is disclosed that norbornene is an olefin that can be used in the process to form the polyolefin. The Examiner contends it would be obvious to form the heat exchanger of Fletcher of norbornene because of Winter, and therefore claim 1 is obvious.

It would not be obvious to form the heat exchanger of Fletcher of norbornene. There is no suggestion in Fletcher to form the tubes of the heat exchanger of norbornene. Fletcher only suggests forming the tubes of polyamide. Winter does not suggest forming a heat exchanger of norbornene, but rather suggests using polymerized olefins, such as norbornene, in a process to preparing a polyolefin having a high molecular weight. That is, Winter suggests the formation of a polyolefin which can be formed from norbornene. There is no suggestion to employ the polyolefin of Winter in Fletcher, and it is not obvious to combine Fletcher and Winter. Applicant's claims are not obvious.

Additionally, as disclosed in Applicant's specification, employing norbornene polymer provides several advantages over the prior art. Norbornene polymer has good temperature resistance to the high temperatures of the flue vent gases and has physical and chemical resistance to the acidic condensate formed by the condensing heat exchanger to reduce corrosion. Norbornene polymer is also inexpensive and can be used in the current commercial extrusion and blow molding processes. Forming a plurality of cells of a heat exchanger of a norbornene

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polymer provides many advantages over the prior art. Applicant is not claiming to have invented the use of norbornene, but is rather claiming a unique heat exchanger formed of a unique material that provides many advantages. Fletcher does not teach a norbornene heat exchanger, but rather teaches the use of polyamide, a different polymer, as the material of the heat exchanger. Applicant's claims are not obvious.

Claim 2 stands rejected under 35 U.S. §103(a) as being unpatentable Fletcher in view of Winter further in view of Ninomiya et al (U.S. Patent No. 5,525,288). Ninomiya discloses a method of manufacturing a hose including the steps of extruding the hose and then expanding the hose in a mold to conform the hose to a cavity surface of the mold. The Examiner contends that it would be obvious to extrude the tubular portions of Fletcher, rather than injection molding the tubular portions, and therefore Applicant's claims are obvious.

Applicant's claims are not obvious. In column 4, lines 55-58 of Fletcher, it is disclosed that is intended that the article 1 (including the tubes 4 and the end elements 2 and 3) be manufactured as an integral unit in an injection molding process. If the tubes 4 of Fletcher were formed by an extrusion process because of Ninomiya, the tubes 4 would have to be later attached to the end elements 2 and 3. If the tubes 4 of the article 4 were extruded, the article 1 could not be manufactured as an integral unit, ruining this disclosed benefit of Fletcher. There is no suggestion to form the tubes 4 of Fletcher by extrusion. It would not be obvious to extrude the tubes 4 of the article 1 of Fletcher. Applicant's claim 2 is not obvious in view of the combination of Fletcher, Winter and Ninomiya, and Applicant respectfully requests that the rejection be withdrawn.

Claims 24-27 stand rejected under 35 U.S. §103(a) as being unpatentable over Fletcher in view of Winter and further in view of Berg (U.S. Patent No. 4,202,405) as taken with Sorensen (U.S. Patent No. 3,779,005). Alternately, Claims 24-27 stand rejected under 35 U.S. §103(a) as being unpatentable over Fletcher in view of Winter and further in view of Larinoff (U.S. Patent No. 5,787,970), Berg and Sorensen. Claim 22 stands rejected under 35 U.S. §103(a) as being unpatentable over Fletcher in view of Winter, Larinoff, Sorensen, Ninomiya, Taga, and Berg. Taga discloses an extrusion molding process. Berg discloses an air cooled condenser 10 including a plurality of tube bundles 11 includes tubes 17, 18, 19 and 20. Steam or other vapor to be condensed is introduced into the outer ends of tubes 17 and 18 and flows in a first direction.

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The steam flows through a u-shaped portions 45 and 46 and exits through the tubes 19 and 20 while flowing in a second direction opposite to the first direction. As shown in Figure 1, because of the u-shaped portions 45 and 46, the vapor enters and exits on the same side of the condenser 10. Sorensen suggests an air cooler condenser used in the automotive industry. Larinoff discloses an air-cooled vacuum steam condenser having a tube 10.2 located between tubes 10.1 and 10.3. The tubes 10.1 and 10.3 are connected by a rear header 22.3 to form a u-shaped tube. The Examiner contends that it would be obvious to one having ordinary skill in the art to use u-shaped tubes of norbornene in Fletcher, and therefore claims 24-27 are obvious.

It would not be obvious to employ u-shaped tubes in Fletcher. Column 4, lines 2-4 of Fletcher discloses that it is preferred that the tubes 4 of the article 1 be linear. If the heat exchanger of Fletcher includes u-shaped tubes, this disclosed preference would be ruined. Additionally, the structure of Fletcher requires an end element 2 and 3 at the ends of the tubes 4 to support the ends of the tubes 4. There is no suggestion in Fletcher to using u-shaped tubes. It is not obvious to employ u-shaped tubes in Fletcher, and claims 24-27 are not obvious.

Claims 2-6, 10, 11 and 21-23 stand rejected under 35 U.S. §103(a) as being unpatentable over Fletcher in view of Winter, Berg, Sorensen and further in view of Ninomiya and Taga (U.S. Patent No. 3,425,092). Claims 2-6, 10, 11 and 21-23 stand rejected under 35 U.S. §103(a) as being unpatentable over Fletcher in view of Winter, Larinoff, Sorensen and further in view of Ninomiya and Taga. The Examiner states that it would be obvious to extrude the tubes 4 of Fletcher in view of these combinations, and therefore Claims 2-6, 10, 11 and 21-23 are obvious.

Again, as previously discussed, it is disclosed in Fletcher that it is intended that the article 1 be manufactured as an integral unit in an injection molding process. If the tubes 4 of Fletcher were formed by an extrusion process, the tubes 4 would have to be later attached to the end elements 2 and 3. If the tubes 4 of the article 4 were extruded, the article 1 could not be manufactured as an integral unit, ruining this disclosed benefit of Fletcher. There is no suggestion to extrude the tubes 4 of Fletcher. Claims 2-6, 10, 11 and 21-23 are not obvious, and Applicant requests that the rejection be withdrawn.

Claims 1 and 24-27 stand rejected under §103(a) as being unpatentable over Ripka et al in view of Fletcher and Winter. Claims 2-6, 10, 11 and 21-23 stand rejected under §103(a) as being obvious over Ripka et al in view of Fletcher, Winter, Ninomiya and Taga. Ripka discloses

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an air heating apparatus 11 including heat pipes 201. An evaporating part 204 of the heat pipes 201 is located inside a combustion chamber 13 and a condensing part 205 of the heat pipes 201 is located inside an air heating chamber 14. The tubes can be straight 201b or U-shaped 201a. The radiant burner 15 blocks the path of the pipes 201. Therefore, the heat pipes 201a proximate to the radiant burner 15 are u-shaped to accommodate the radiant burner 15, which extends through the u-shaped portion of the pipes 201a. Ripka discloses that the heat pipes 201 are made of copper. The Examiner contends that it would be obvious to provide to form the heat transfer component of Ripka of norbornene because of Fletcher and Winter, and therefore Applicant's claims are obvious.

Ripka discloses in column 6, lines 39 to 40, that the tubes 201 of the air heating apparatus 11 are made of copper or aluminum. Ripka teaches the use of a non-polymer material. There is no suggestion in Ripka to make the tubes 201 of a polymer, such as norbornene, as required by Applicant's claims. There is no suggestion to make the tubes of the heat exchanger of Ripka of the polymer norbornene as suggested Fletcher and Winter.

Thus, claims 1-10 and 12-27 are in condition for allowance. The Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., \$110.00 for a one-month extension of time fee. No additional fees are seen to be required. If any additional fees are due, however, the Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., for any additional fees or credit the account for any overpayment. Therefore, favorable reconsideration and allowance of this application is respectfully requested.

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Respectfully Submitted,

CARLSON, GASKEY & OLDS, P.C.



Karin H. Butchko

Registration No. 45,864

Attorneys for Applicant

400 West Maple Road, Suite 350

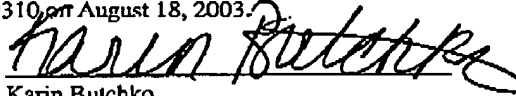
Birmingham, Michigan 48009

(248) 988-8360

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CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, TC 1700, Before Final, 703-872-9310, on August 18, 2003.



Karin Butchko

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